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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,791	03/03/2004	Hyeong-Min Ahn	103-1004	4385

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STANZIONE & KIM, LLP
919 18TH STREET, N.W.
SUITE 440
WASHINGTON, DC 20006

EXAMINER

MARTINEZ, JOSEPH P

ART UNIT PAPER NUMBER

2873

DATE MAILED: 07/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/790,791	AHN ET AL.	
	Examiner	Art Unit	
	Joseph P. Martinez	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-15 is/are allowed.
- 6) ☒ Claim(s) 1-3,8 and 16-19 is/are rejected.
- 7) ☒ Claim(s) 4-7,9,10 and 20-27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3-3-04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of claims 1-10 in the reply filed on 4-20-06 is acknowledged. The traversal is found persuasive and the election/restriction is rescinded. Therefore, all of claims 1-27 shall be examined.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 8, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlton et al. (643,711).

Re claim 1, Carlton et al. teaches for example in fig. 8-10, an optical system, comprising: a lens; an image producing surface on which an image corresponding to the object is produced according to the light (col. 2, ln. 100-101); and an image producing surface control unit (DD, 11, 18, 24) to control the image producing surface to move with respect to the lens (col. 6, ln. 120-122).

But, Carlton et al. fails to explicitly teach refracting light radiating from an object.

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However, Carlton et al. teaches for example, a lens for focusing (col. 3, ln. 40-45). The office interprets focusing to include refracting the light as is well known in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Carlton et al. in order to provide a distortion free image, as is well known in the camera art.

Re claim 16, Carlton et al. teaches for example in fig. 8-10, an optical system, comprising: a lens; an image producing surface on which an image corresponding to the object is produced according to the light (col. 2, ln. 100-101), the lens and the image producing surface inclined in a opposite directions relative to an optical axis of the lens (col. 6, ln. 120-122).

But, Carlton et al. fails to explicitly teach refracting light radiating from an object.

However, Carlton et al. teaches for example, a lens for focusing (col. 3, ln. 40-45). The office interprets focusing to include refracting the light as is well known in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Carlton et al. in order to provide a distortion free image, as is well known in the camera art.

Re claim 2, Carlton et al. further teaches for example in fig. 8-10, the image producing surface control unit (DD, 11, 18, 24) comprises an angle control unit to

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control an angle between an optical axis of the lens and the image producing surface (18, 24).

Re claim 3, Carlton et al. further teaches for example in fig. 8-10, a base (E) to which the lens is mounted (C), and having a rotative shaft (18); and a body to which the image producing surface is mounted (A), the body coupled to the base by the rotative shaft to rotate relative to the base (col. 6, ln. 120-122).

Re claim 8, Carlton et al. further teaches for example in fig. 8-10, the angle control unit comprises: a distance adjusting unit (24) provided at a position which is spaced apart from the rotative shaft (18).

Re claim 17, Carlton et al. further teaches for example in fig. 1 and 8-10, the image producing surface (A) is movably disposed to be inclined with respect to a line perpendicular to the optical axis of the lens (col. 1, ln. 10-18).

Re claim 18, Carlton et al. further teaches for example in fig. 1, the lens is disposed on a first plane perpendicular to the optical axis of the lens (vertical plane of C), and the image producing surface is inclined with respect to the first plane of the lens (inclined plane of A).

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Re claim 19, Carlton et al. further teaches for example, the object (tall object; col. 1, ln. 17) is disposed on a second plane (arbitrary plane where the photographic object resides) inclined with respect to the optical axis of the lens (wherein the office interprets the "tall object" to include at least one arbitrary plane inclined with respect to the optical axis of the lens).

Allowable Subject Matter

Claims 11-15 are allowed.

Claims 4-7, 9, 10 and 20-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: the prior art taken alone or in combination fails to anticipate or fairly suggest the limitations of the claims, in such a manner that a rejection under 35 USC 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in independent claim 11 and dependent claims 4, 5, 9, 10, 20, 21 and 25.

Specifically regarding claim 11, Carlton et al. teaches the state of the art of an optical system.

But, Carlton et al. fails to explicitly teach a combination of all the claimed features including an inclined optical system, comprising; an optical axis of the lens is disposed at a predetermined angle with the object, and wherein, when the optical axis is

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expressed by X , an intersection point between a first main surface of the lens, which faces the object, and the optical axis X is expressed by a first main point O_1 , and an intersection point between a second main surface of the lens, which faces the image producing surface, and the optical axis X is expressed by a second main point O_2 , when a first point on the object is expressed by A , a foot of the first point A perpendicular to the optical axis X is expressed by A_0 , a distance between the foot A_0 and the first main point O_1 is expressed by s_2 , an image of the first point A produced on the image producing surface is expressed by A' , a foot of the image A' perpendicular to the optical axis X is expressed by A'_0 , and a distance between the foot A'_0 and the second main point O_2 is expressed by s'_2 , and when a second point on the object is expressed by C , a foot of the second point C perpendicular to the optical axis X is expressed by C_0 , a distance between the foot C_0 and the first main point O_1 is expressed by s_3 , an image of the second point C produced on the image producing surface is expressed by C' , a foot of the image C' perpendicular to the optical axis X is expressed by C'_0 , and a distance between the foot C'_0 and the second main point O_2 is expressed by s'_3 , the image producing surface is inclined relative to the optical axis X of the lens so that the distance s'_2 is shorter than the distance s'_3 when the distance s_2 is longer than the distance s_3 , as claimed.

Specifically regarding claim 4, Carlton et al. teaches the state of the art of an optical system.

But, Carlton et al. fails to explicitly teach a combination of all the claimed features including a central axis of the rotative shaft and the image producing surface are placed on the same plane, as claimed.

Specifically regarding claim 5, Carlton et al. teaches the state of the art of an optical system.

But, Carlton et al. fails to explicitly teach a combination of all the claimed features including the image producing surface rotates with respect to the same plane as the rotative plane, as claimed.

Specifically regarding claim 9, Carlton et al. teaches the state of the art of an optical system.

But, Carlton et al. fails to explicitly teach a combination of all the claimed features including an elastic member having a first end mounted to the base, and a second end mounted to the body, as claimed.

Specifically regarding claim 10, Carlton et al. teaches the state of the art of an optical system.

But, Carlton et al. fails to explicitly teach a combination of all the claimed features including a thimble, a spindle and a sleeve, as claimed.

Specifically regarding claim 20, Carlton et al. teaches the state of the art of an optical system.

But, Carlton et al. fails to explicitly teach a combination of all the claimed features including the object comprises first and second portions disposed opposite to each other with respect to the optical axis of the lens, and the image producing surface moves with respect to the lens so that the image corresponding to the first and second portions of the object is clearly obtained on the image producing surface, as claimed.

Specifically regarding claim 21, Carlton et al. teaches the state of the art of an optical system.

But, Carlton et al. fails to explicitly teach a combination of all the claimed features including the object comprises a first and second portions, the image comprises a first sub-image and a second sub-image corresponding to first and second portions of the object, respectively, and the image producing surface is inclined relative to the optical axis of the lens so that a distance from the lens to the first sub- image is shorter than a distance from the lens to the second sub-image when a distance from the lens to the first portion of the object is longer than a distance from the lens to the second portion of the object, as claimed.

Specifically regarding claim 25, Carlton et al. teaches the state of the art of an optical system.

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But, Carlton et al. fails to explicitly teach a combination of all the claimed features including at least one shaft formed on the base; a frame on which the image producing surface is mounted, the frame having at least one shift mounting hole to receive the at least one shaft; and an image producing surface control unit to move the frame with respect to the base, as claimed.

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bohm et al. (2974574) teaches an image capture surface capable of being tilted with respect to a camera lens.

Tsai (20030086143) teaches an image capture surface capable of being displaced with respect to a lens.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph P. Martinez whose telephone number is 571-272-2335. The examiner can normally be reached on M-F 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JPM
7-6-06


RICKY MACK
SUPERVISORY PATENT EXAMINER